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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,978	04/10/2001	Rainer Uhl	740105-70	7149

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EXAMINER	
FINEMAN, LEE A	
ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 05/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/828,978	UHL, RAINER	
	Examiner	Art Unit	
	Lee Fineman	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 April 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. The drawings fail to show a concave objective lens. Additionally, the drawings fail to show the specimen on a surface of the holder facing away from the objective lens. Therefore, these features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: In paragraph 18, line 6 the sentence is not complete with "as" at the end.

Appropriate correction is required.

Claim Objections

4. Claim 11 is objected to because of the following informalities: There is insufficient antecedent basis for the following limitation: "said concave surface" (claim 11, line 3). Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 9-11 and 15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 9, it is recited that the body of the objective lens in concave. The applicant is directed to figures 1 and 3, which illustrate the objective lens (116) as being convex. As such, neither the specifications nor the drawings supports this claimed limitation.

Regarding claims 10 and 11, it is recited that the specimen is on a surface of the holder facing away from the objective lens. The applicant is directed to figures 1 and 3, which illustrate the specimen on the surface of the holder (120) facing the objective lens. As such, neither the specifications nor the drawings supports this claimed limitation.

Regarding claim 15, which is dependent on claim 1, the combination recites laser light from outside a boundary and also light focused through the objective lens on the specimen. As

illustrated in fig. 3, no light is focused through the objective lens on the specimen and in fig. 1 no laser light is used from outside a boundary. As such, no embodiment is disclosed that utilizes both the focused and laser light.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Räntsch, U.S. Patent No. 2,944,463.

Räntsch clearly shows a microscope that includes all the limitations recited in claims 1 and 13. Figure 1 has a light source (1), an objective lens (8) positioned for focusing the light beam on the specimen (10) area for illumination and a reflector means (11) to reflect the light back through the illuminated area of the specimen and a dichroic beam splitter (3, 5, 6) which reflects and is impermeable to excitation light.

7. Claims 1-2,10, and 13-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lanni et al., U.S. Patent No. 5,801,881.

Lanni clearly shows a microscope that includes all the limitations recited in claim 1. Figure 4 has a light source (20), an objective lens (8) positioned for focusing the light beam on the specimen (2) area for illumination and a reflector means (16) to reflect the light back through the illuminated area of the specimen.

Regarding claim 2, Lanni discloses a light source (20) as a mercury lamp that can produce both transmission light and epi-fluorescent light (column 8, lines 54-62.

Regarding claim 10, Lanni discloses a transparent holder (4) for supporting the specimen on a surface facing away from the objective lens (8) in figures 4 and 5.

Regarding claim 13 and 14, Lanni discloses a dichroic beam splitter (26) in figure 4 for reflecting excitation light from the light source (20) into the objective lens (8). The dichroic beam splitter (26) is essentially impermeable to excitation light and essentially permeable with respect to fluorescent light (column 8, lines 56-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lanni.

Lanni discloses the claimed invention except for being adaptable to produce a light beam of a wavelength that is variable. However it is well known to one having ordinary skill in the art at the time the invention was made to use variable wavelengths to view samples having different characteristics of emission and absorption spectrums. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the light source of Lanni adjustable to variable wavelengths to be able to view samples with different characteristics of emission and absorption spectrums.

9. Claims 4-5, 7-8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Räntsch in view of Pinkel et al., U.S. Patent No. 5,982,534.

Räntsch discloses the invention as claimed except for the reflector means being a concave, hemispherically shaped body with an aperture therein. Pinkel teaches a reflective means being a concave, hemispherically shaped body with an aperture therein (fig. 2, 205, 207 and column 11, lines 1-13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the body of the reflective means of Räntsch as a concave, hemispherically shaped body with an aperture for the purpose of gathering more of the light beam and illuminating a larger area. It also can be adapted to reflect essentially all of the illumination light beam. Thereby, at least a portion of the concave surface is reflective to at least a portion of the illumination light to produce oblique illumination of the specimen.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Räntsch in view of Pinkel as applied to claims 4 and 5 above, and further in view of Allingham, U.S. Patent No. 3,497,377.

Räntsch in view of Pinkel discloses the claimed reflector means except for an explicit written teaching that the body is transparent. Allingham teaches that a reflector means, or more commonly, a mirror is a surface having transparent characteristics with a backing of high reflectivity and opaqueness (column 1, lines 32-35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the reflector of Räntsch so as to include a body of transparent material to protect the reflective surface of the reflector means from damage.

11. Claims 4-5, 7-9, 11-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanni in view of Pinkel.

Lanni further discloses use of an immersion fluid (not numbered) in figure 5 to optically couple the holder (4) to the reflector means (16) and to optically couple the objective lens with a concave shaped body (8) to the specimen (2). Lanni discloses the invention as claimed except for the reflector means being a concave, hemispherically shaped body with an aperture therein. Pinkel teaches a reflective means being a concave, hemispherically shaped body with an aperture therein (fig. 2, 205, 207 and column 11, lines 1-13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the body of the reflective means of Lanni as a concave, hemispherically shaped body with an aperture for the purpose of gathering more of the light beam and illuminating a larger area. It also can be adapted to reflect essentially all of the illumination light beam. Thereby, at least a portion of the concave surface is reflective to at least a portion of the illumination light to produce oblique illumination of the specimen.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lanni in view of Pinkel as applied to claim 16 above, and further in view of in view of Williams, U.S. Patent No. 6,255,083.

Lanni further discloses an optical system that utilizes both a laser light source and transmitted light (fig. 10). Lanni as modified by claim 16 discloses the claimed invention except for laser light being emitted from outside a boundary surface of the reflector means to a reflecting boundary surface to the surface of the specimen that reflects the laser light at an angle such that total refection of the laser light occurs at the boundary surface to the surface of the

specimen by which fluorescent excitation of the specimen occurs. Williams teaches in figure 4 using a laser (1) to reflect off the surface of the specimen (4) and reflects the laser light at an angle such that total refection of the laser light occurs at the boundary surface to the surface of the specimen (column 15, lines 6-8) by which fluorescent excitation of the specimen occurs (column 15, line 11). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lanni to include a laser in this embodiment of the invention to enable multi-modal viewing of the sample.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Temple, U.S Patent No. 4,297,032 and Suzuki et al., U.S. Patent No. 6,215,549 disclose laser light systems but do not disclose fluorescent excitation of the specimen.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (703) 305-5414. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

LAF
May 3, 2002

Cassandra Spyrou
Supervisory Patent Examiner
Technology Center 2800